

What is claimed is:

1. A carpet comprising a primary backing material having a face and a back side, a plurality of fibers attached to the primary backing material and extending from the face of the primary backing material and exposed at the back side of the primary backing material, an adhesive backing material and an optional secondary backing material adjacent to the adhesive backing material, wherein at least one of the plurality of fibers, the primary backing material, the adhesive backing material or the optional secondary backing material is comprised of at least one homogeneously branched ethylene polymer characterized as having a short chain branching distribution index (SCBDI) of greater than or equal to 50 percent.
2. The carpet of Claim 1 wherein the adhesive backing material is comprised of the at least one homogeneously branched ethylene polymer.
3. The carpet of Claim 1 wherein the homogeneously branched ethylene polymer is an interpolymers of ethylene with at least one C₃-C₂₀ α -olefin.
4. The carpet of Claim 3 wherein the homogeneously branched ethylene polymer is a copolymer of ethylene and one C₃-C₂₀ α -olefin.
5. The carpet of Claim 4 wherein the one C₃-C₂₀ α -olefin is selected from the group consisting of propylene, 1-butene, 1-isobutylene, 1-pentene, 1-hexene, 4-methyl-1-pentene, 1-heptene and 1-octene.
6. The carpet of Claim 5 wherein the one C₃-C₂₀ α -olefin is 1-octene.
7. A method of making a carpet, the carpet comprising a primary backing material having a face and a back side, a plurality of fibers attached to the primary backing material and extending from the face of the primary backing material and exposed at the back side of the primary backing material, an adhesive

backing material disposed on the back side of the primary backing material and an optional secondary backing material adjacent to the adhesive backing material, the method comprising the step of extrusion coating an adhesive backing material or an optional secondary backing material onto the back surface of the primary

5 backing material, wherein the extruded coated adhesive backing material or optional secondary backing material is comprised of at least one homogeneously branched ethylene polymer characterized as having a short chain branching distribution index (SCBDI) of greater than or equal to 50 percent.

10 8. The method of Claim 7 wherein an adhesive backing material is extrusion coated onto the back side of the primary backing material.

9. The carpet of Claim 1 wherein (i) the fibers, primary backing, adhesive backing and optional secondary backing all comprise a polyolefin

15 polymer, (ii) the olefin monomer chemistry of the adhesive backing differs from that of the fibers and the primary backing, and (iii) the carpet includes a label or literature at the time of sale which represents that the carpet is recyclable without segregation of carpet components.

20 10. The carpet of Claim 1 or the method of Claim 7 wherein the at least one homogeneously branched ethylene polymer is further characterized as having a single differential scanning calorimetry, DSC, melting peak between -30 and 150°C.

25 11. The carpet or method of Claim 10 wherein the at least one homogeneously branched ethylene polymer is a substantially linear ethylene polymer characterized as having:

- (a) a melt flow ratio, $I_{10}/I_2 \geq 5.63$,
- 30 (b) a molecular weight distribution, M_w/M_n , as determined by gel permeation chromatography and defined by the equation:
 $(M_w/M_n) \leq (I_{10}/I_2) - 4.63$, and

- 5 (c) a gas extrusion rheology such that the critical shear rate at onset of surface melt fracture for the substantially linear ethylene polymer is at least 50 percent greater than the critical shear rate at the onset of surface melt fracture for a linear ethylene polymer, wherein the linear ethylene polymer has a homogeneously branched short chain branching distribution and no long chain branching, and wherein the substantially linear ethylene polymer and the linear ethylene polymer are simultaneously ethylene homopolymers or interpolymers of ethylene and at least one C₃-C₂₀ α -olefin and have the same I₂ and M_w/M_n and wherein the respective critical shear rates of the substantially linear ethylene polymer and the linear ethylene polymer are measured at the same melt temperature using a gas extrusion rheometer.

10 12. The carpet of Claim 1 or the method of Claim 7 wherein the at least one homogeneously branched ethylene polymer is homogeneously branched linear ethylene polymer.

15 13. A method of making a carpet, the carpet comprising a collapsed, non-expanded adhesive backing material, a primary backing material having a face and a back side and yarn characterized as having free space attached to the primary backing material and extending from the face of the primary backing material and exposed at the back side of the primary backing material, the adhesive backing material comprising at least one ethylene polymer and is in intimate contact with the primary backing material and has substantially penetrated and substantially consolidated the yarn, the method comprising the step of adding an effective amount of at least one implosion agent to the adhesive backing material and thereafter activating the implosion agent during an extrusion coating step such that molten or semi-molten polymer is forced into the free space of yarn exposed on the back side of the primary backing material.

- 20 14. A method of making carpet comprising the steps of :
providing a primary backing material;

tufting a yarn into the primary backing material to produce a carpet pile on the face side of the primary backing material and loops of the yarn on the back side of the primary backing material;

extruding a sheet of a thermoplastic material to the back side of the

5 primary backing;

prior to the extruding step, treating at least the back side of the primary backing and loops of the yarn on the back side of the primary backing to remove undesirable chemicals from the surface and thereby enhance the adhesion of the extruded sheet, wherein the treatment is consists of the application of steam,

10 chemical solvent or heat to flash, scour or wash away or remove undesirable chemicals thereon the yarn or primary backing.

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